



UNIVERSITY OF UTAH

Department of Computer Science

Programs of Study

The Department of Computer Science offers programs leading to the M.E., M.S., and Ph.D. degrees. The graduate programs are open to computer science and mathematics graduates and also to students whose preparation is outside of computer science.

Most of a doctoral student's time is devoted to courses and research, including personal participation in the research and teaching environment of the department on a day-to-day basis. The time for completion of the Ph.D. is normally four years of graduate study, assuming some teaching obligations during that time. A full-time student working on an M.S. program normally completes the degree requirements, including thesis, within two calendar years. The M.E. is a professional nonthesis master's degree requiring 45 credit hours of course work.

The Department of Computer Science has an active, highly visible faculty engaged in a variety of research areas: asynchronous computation, computer-aided geometric design, computer systems, data-driven machines, large-scale integration, logic arrays, parallel computation, programming languages, program verification, sensory information processing, software portability, symbolic and algebraic computation, theory of computation, and several applications areas.

Some of the graduate courses offered by the department are: programming linguistics and data structures, programming laboratory, compiler construction, programmer's introduction to logic design, logic design laboratory, program verification, switching circuit theory, digital systems laboratory, theoretical computer science, operating systems, fundamentals of integrated circuits, LSI circuits design, computer graphics, computer music seminar, computational complexity, organization of computing systems, software engineering, waveform processing, sensory information processing, and computer-aided geometric design.

Research Facilities

Departmental computing facilities include a DECsystem 2040, a Burroughs B1865, a DEC PDP-10 image/audio processing system, which is run in single-user mode, a DEC PDP-11/45 with an FPS-120B array processor, a graphics system consisting of a DEC PDP-11/34, an Evans and Sutherland Picture System I and a Grinnell color frame buffer, a small computer lab, and several smaller computers. It is possible to design and fabricate LSI circuits using the facilities of the VLSI Laboratory in the department and the HEDCO Microelectronics Laboratory, located in the same building. These facilities include a CAD machine for designing LSI circuits, and mask-making, fabrication, and testing facilities. The department also maintains special research facilities for sensory information processing, photographic processing, and a digital systems laboratory for fabricating conventional digital systems.

Financial Aid

Teaching and research assistantships are available to all full-time graduate students. Stipends range from \$4300 to \$5600 for the nine-month academic year, depending on level of candidacy. Research support is also available for the summer. Full waiver of tuition is granted to teaching assistants.

Cost of Study

Resident tuition is approximately \$240 per quarter (\$720 per academic year) for 10 credit hours. Nonresident tuition is approximately \$614 per quarter (\$1842 per academic year) for 10 credit hours.

Cost of Living

Dormitory rooms cost approximately \$1900 to \$2300 per academic year, including meals. Married students' apartments rent for approximately \$141 to \$247 per month, including utilities. Off-campus housing is moderately priced. The cost of living in the area is moderate.

Student Group

The department has approximately 60 full-time graduate students who have a variety of backgrounds. Geographic representation includes many parts of the United States as well as Canada, China, Egypt, Germany, India, Israel, Japan, and Korea.

The Community

Salt Lake City is often called the Crossroads of the West. Forty-five minutes from the campus are some of the world's finest skiing and a National Wilderness Area. Hiking, fishing, mountaineering, river-running, hunting, and desert solitude are only hours away, as are over twenty national parks, monuments, and wild rivers. Cultural activities include full performance seasons by the Utah Symphony, Ballet West, Repertory Dance Theatre, Utah Opera Company, and other amateur and professional music and theatrical groups. Computer-related industries include Evans and Sutherland, Soundstream, Univac, Signetics, Intersil, and National Semiconductor.

The University

The University of Utah is the oldest state university west of the Missouri River. The 1,500-acre University campus is in the foothills of the Wasatch mountain range.

The University operates on the quarter system with a shortened summer session. There are approximately 1,700 teaching faculty members and an additional 1,800 auxiliary faculty members. The student body numbers nearly 22,000. Excellent recreational facilities for students are offered by the University. These include a nine-hole golf course, tennis courts, and a newly remodeled field house with facilities for racquetball and squash and an indoor jogging track.

The Department of Computer Science is located in the Merrill Engineering Building at the northern edge of the campus.

Applying

Application forms for admission and financial aid, advice concerning the department's application procedures, and a copy of the department handbook may be obtained from the address below. Applications for admission to the graduate program should be received in the University Admissions Office by January 15. The admissions decision is made after careful consideration by the Department Graduate Admissions Committee, which reviews the student's transcripts, Graduate Record Examination scores, letters of recommendation, and specific research goals. International students must submit their official score on the Test of English as a Foreign Language to the University Admissions Office.

Correspondence and Information

Chairman of Graduate Admissions
Department of Computer Science
University of Utah
Salt Lake City, Utah 84112

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THE FACULTY

- Robert E. Barnhill, Professor of Computer Science; Ph.D., Wisconsin, 1964. Computer-aided geometric design, numerical analysis.
- Brent S. Baxter, Research Assistant Professor of Computer Science; Ph.D., Utah, 1975. Visual perception and digital signal processing.
- Steven F. Boll, Assistant Professor of Computer Science; Ph.D., Utah, 1973. Digital speech and signal processing.
- Elaine Cohen, Research Assistant Professor of Computer Science; Ph.D., Syracuse, 1974. Mathematical structures in sensory information processing.
- Alan L. Davis, Associate Professor of Computer Science; Ph.D., Utah, 1972. Asynchronous concurrent languages and machine systems, data-driven computation.
- David C. Evans, Adjunct Professor of Computer Science; Ph.D., Utah, 1953. Graphical man-machine systems.
- Ercolino Ferretti, Research Associate Professor of Computer Science; B.S., New England Conservatory of Music, 1950. Computer music.
- Martin L. Griss, Associate Professor of Computer Science; Ph.D., Illinois, 1971. Software portability, symbolic computation, programming languages, microcomputer software.
- Anthony C. Hearn, Professor of Computer Science; Ph.D., Cambridge, 1962. Symbolic computation, algebraic manipulation, software techniques.
- Robert M. Keller, Associate Professor of Computer Science; Ph.D., Berkeley, 1970. Theory of asynchronous computation and its applications to hardware design and operating systems.
- Gary E. Lindstrom, Associate Professor of Computer Science; Ph.D., Carnegie-Mellon, 1971. Programming language design and implementation, data structures.
- Elliott I. Organick, Professor of Computer Science; Ph.D., Michigan, 1950. Programming languages, computer system architecture, design automation.
- Suhas S. Patil, Associate Professor of Computer Science; Sc.D., M.I.T., 1970. Parallel processing systems, computer architecture, asynchronous circuits.
- Richard F. Riesenfeld, Associate Professor of Computer Science; Ph.D., Syracuse, 1973. Computer-aided geometric design.
- Kent F. Smith, Research Associate Professor of Computer Science; M.S., Utah, 1958. Integrated circuit design and the application of integrated circuits to computer systems.
- Robert E. Stephenson, Professor of Computer Science and Associate Dean of the College of Engineering; Ph.D., Purdue, 1952. Solutions to typical problems in engineering using computer methods, especially computer simulation of discrete and continuous systems.
- Thomas G. Stockham Jr., Professor of Computer Science; Sc.D., M.I.T., 1959. Sensory information processing, digital signal processing.
- P. A. Subrahmanyam, Assistant Professor of Computer Science; Ph.D., S.U.N.Y. at Stony Brook, 1979. Artificial intelligence, programming languages.
- William J. Viavant, Professor of Computer Science; Ph.D., Texas, 1951. Communication between man and machine and the design of small interactive-active computer systems for educational use.